

**WHAT IS CLAIMED IS:**

1. A repeater remote control system in a mobile communication system comprising:
  - a server that controls at least one repeater through packet data transmissions sent through a mobile IP network; and
  - a data terminal unit that establishes a first link between said repeater and the server through the mobile IP network.
2. The system of claim 1, wherein the data terminal unit establishes a second link between said repeater and the server by interworking with a mobile communication network.
3. The system of claim 2, wherein after the second link is established, the data terminal unit passes control packet data from the server to said repeater through the mobile IP network.
4. The system of claim 1, wherein said packet data transmissions include an SMS message.
5. The system of claim 1, wherein the server sends said packet data transmissions to said repeater by matching with an IWF (InterWorking Function) within the mobile communication network.

6. The system of claim 1, wherein the data terminal unit is controlled according to an IS-707 standard.

7. A repeater remote control method in a mobile communication system, comprising:

establishing a first link between a server and a data terminal unit through a mobile communication network and a second link between the server and the data terminal unit through a mobile IP network;

transmitting packet data for controlling a repeater from the server to the data terminal unit through the mobile IP network; and

sending the packet data from the data terminal unit to said repeater.

8. The method of claim 7, wherein said establishing the first link comprises:

checking whether the data terminal unit is in a normal state, said checking performed by the repeater;

if the data terminal unit is in the normal state, transmitting server connection information from the repeater to the data terminal unit;

conducting a procedure for approval of connection with the server through the mobile communication network based on the server connection information; and

receiving a message indicating the server connection approval and transmitting the received message to the repeater.

9. The method of claim 8, wherein server connection information comprises at least one of a phone number, an IP address, and server port information of the server to be connected.
10. The method of claim 7, further comprising:
  - checking a version of control software embedded in the repeater; and
  - updating the repeater with a new version of the control software.
11. The method of claim 7, further comprising:
  - checking whether a disconnection request has been sent from the server, said checking performed by the repeater; and
    - if no disconnection request has been sent, unless there is data transmission with the server during a standby time, automatically disconnecting at least one of the first link and second link.
12. The method of claim 11, wherein said automatic disconnection comprises:
  - after the disconnection, checking whether data exists that has not yet been transmitted to the server from the repeater, said checking being performed by the repeater; and
    - if such data exists, sending a connection request again to the server.

13. A repeater remote control method in a mobile communication system comprising:

establishing a link between a repeater and a server through data terminal equipment;

selecting a management mode; and

transmitting packet data to the repeater through a mobile IP network including the link based on the selected management mode.

14. The method of claim 13, wherein establishing the link includes transmitting at least one SMS message within the mobile communication network.

15. The method of claim 13, wherein establishing the link includes transmitting a wireless modem ring signal upon matching with an IWF (InterWorking Function) within the mobile communication network.

16. The method of claim 13, wherein establishing the link comprises:

checking an ID and connection state of the repeater by loading a stored repeater management table; and

if the link has not been established with the repeater, establishing the link by transmitting an SMS message or ring signal to the data terminal equipment connected to the repeater.

17. The method of claim 16, wherein said repeater management table comprises one or more of the following: a repeater ID field, a data terminal phone number field, a connection state field, a connection ID field, a field of IPs assigned to the data terminal equipment, and a download status field.

18. The method of claim 13, further comprising:  
collecting status information of the repeater connected to said data terminal equipment, and then reporting the status information to the server at an information report time.

19. The method of claim 18, wherein the status information includes information indicative of a cause of an alarm occurring at the repeater and information relating to an internal location of the repeater when the alarm has occurred.

20. The method of claim 13, further comprising:  
collecting only information required for repeater management and remote control, and reporting the information to the server at an information report time.

21. The method of claim 20, wherein the information indicates at least one of whether the repeater is in operation and a version of control software in the repeater.

22. The method of claim 13, further comprising:

    checking whether a disconnection request has been sent from the repeater, said checking performed by the server; and

        if no disconnection request has been sent, unless there is packet data transmission or receipt to or from the repeater within a certain standby time, automatically disconnecting the link.

23. A method for controlling a repeater in a mobile communication system, comprising:

    establishing a first link between a server and the repeater, at least a portion of the first link being established over a mobile IP network;

    transmitting control information between the server to the repeater over the link.

24. The method of claim 23, wherein the repeater initiates establishing the first link.

25. The method of claim 23, further comprising:

    establishing a second link between the server and repeater, wherein at least a portion of the second link is established over a mobile communications network and wherein transmitting the control information is performed after the second link is established.

26. The method of claim 23, wherein the control information is transmitted in a format which complies with an IS-707 standard.
27. The method of claim 23, wherein the first link is established at a time of initial operation of the repeater.
28. The method of claim 23, wherein the first link is established after a disorder occurs in the repeater.
29. The method of claim 23, wherein the first link is established after a determination is made that the repeater has data to transmit to the server.
30. The method of claim 23, further comprising:  
determining whether a version of control software in the repeater is outdated;  
and  
updating the repeater with new control software.
31. The method of claim 23, wherein the updating step includes:  
transmitting the new control software from the server to the repeater over the first link.

32. The method of claim 23, further comprising:
  - disconnecting the first link when a disconnection request is issued.
33. The method of claim 23, further comprising:
  - checking whether data has been transmitted between the server and repeater within a predetermined standby time; and
  - automatically disconnecting the first link when no data has been transmitted during the standby time.
34. A method for controlling a repeater in a mobile communication system, comprising:
  - establishing a link between a server and the repeater based on an internetworking function performed with a mobile communication network; and
  - transmitting control information between the server to the repeater over the link.
35. The method of claim 34, wherein the server initiates establishing the link.
36. The method of claim 34, wherein the establishing step includes:
  - transmitting a connection request message as an SMS message to the repeater over the link; and
  - connecting the link based on a response from the SMS message.

37. The method of claim 34, wherein the establishing step includes:

transmitting a connection request message as a ring signal through a modem to the repeater over the link; and

connecting the link based on a response from the ring signal.